



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/820,914	04/08/2004	Eberhard Lenz	P04,0141	8758
7590 05/03/2005				
SCHIFF HARDIN LLP				
Patent Department				
6600 Sears Tower				
233 South Wacker Drive				
Chicago, IL 60606				
		EXAMINER		
		KEANEY, ELIZABETH MARIE		
		ART UNIT		
		2882		
		PAPER NUMBER		
		2882		
		DATE MAILED: 05/03/2005		

Please find below and/or attached an Office communication concerning this application or proceeding.

EK

Office Action Summary

Application No.

10/820,914

Applicant(s)

LENZ ET AL.

Examiner

Elizabeth Keaney

Art Unit

2882

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 08 April 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-8 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-4 and 8 is/are rejected.
- 7) ☒ Claim(s) 5-7 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 08 April 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 8/12/04.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Priority

Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1 and 4 are rejected under 35 U.S.C. 102(b) as being anticipated by Koller et al. (US Patent 4,736,400; hereinafter Koller).

Re claim 1: Koller discloses, in figures 1 and 2 and throughout the disclosure, a high-capacity x-ray tube comprising:

- a vacuum housing (12);
- a cathode (20) stationarily mounted in the vacuum housing;
- an anode (24) rotatably mounted in the vacuum housing;
- a drive (44) for rotating the anode, the drive having a bearing shaft (28) disposed in the vacuum housing; and
- the anode comprising an anode plate (24) and a load-bearing part (50) having a first end attached to the bearing shaft and a second end attached to the anode plate (30) via a soldered connection (36) between respective connection surfaces of the anode plate and the load bearing

part, with the connection surfaces configured and oriented relative to each other to form a positive fit for causing the connection surfaces to be subject to substantially only to compression upon rotation of the anode.

Re claim 4: Koller discloses, in figure 2 and throughout the disclosure, the solder connection (36) contributing to the positive fit.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 2 and 3 are rejected under 35 U.S.C. 103(a) as being unpatentable over Koller.

Koller discloses all the limitations as shown above, including the connection surfaces having a positive fit.

However, Koller fails to teach or fairly suggest the connection surface having either a clamp connection or a screw connection as the positive fit.

One of ordinary skill in the art at the time the invention was made would recognize various ways of mechanically connecting two dissimilar elements.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to employ either a clamp connection or a screw connection

within the x-ray tube assembly because it allows for a more reliable connection between the anode plate and the load-bearing part thereby preventing misalignment of the anode within the device.

Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Koller as applied to claim 1 above, and further in view of Rother (US Patent 6,567,500).

Koller discloses all the limitations as shown above, including Pd-Co as the soldering material.

However, Koller fails to teach or fairly suggest the soldering material to comprise titanium.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to substitute titanium for the Pd-Co soldering material because titanium has a higher temperature threshold thereby creating a stronger bond between the anode plate and the load-bearing part at higher temperatures.

Allowable Subject Matter

Claims 5-7 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter:

Re claim 5: The best prior art of record discloses a high-capacity x-ray tube comprising an anode plate and a load-bearing part connected via a soldered connection. However, the prior art fails to teach or fairly suggest a high-capacity x-ray tube wherein the connection surfaces comprise a first surface at the second end of the load-bearing part and a second surface formed by an inner annular edge of the anode plate, the first and second surfaces facing each other and, as viewed toward the bearing shaft, the first surface comprising a plurality of gradations, at least one of the gradations producing the positive fit and at least one further one of the gradations forming, with the second surface, an acceptance space for solder of the solder connection, as claimed in claim 5.

Re claims 6-7: The best prior art of record discloses a high-capacity x-ray tube comprising an anode plate and a load-bearing part connected via a soldered connection. However, the prior art fails to teach or fairly suggest a high-capacity x-ray tube wherein the solder connection produces flaked solder particles, and wherein the connection surfaces form a recess for catching the solder particles, as claimed in claim 6. Claim 7 is allowable by virtue of its dependency.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

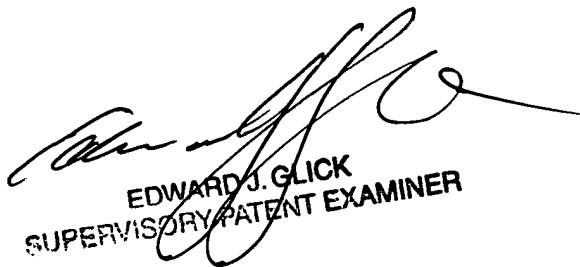
- US Patent 6,819,742 discloses the current state of the art.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Elizabeth Keaney whose telephone number is (571)272-2489. The examiner can normally be reached on Monday-Thursday 5:30-4.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ed Glick can be reached on (571)272-2490. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

EMK
emk


EDWARD J. GLICK
SUPERVISORY PATENT EXAMINER